



**PUBLIC SEED LIBRARY  
PRESENTATION BY EMILY HERB**

# Keep it Coming

**Growing more food with  
succession gardening, row  
covers, thinning, and weeding**



# Succession Gardening

## WHAT

A method of planting where one staggers plantings or uses different maturity rates to extend harvest.

## WHY

Grow what you want to eat, in the amount you can use or manage through eating, trading, or preserving. Harvest food for as long as possible and extend one's season.

## HOW

Through gardening planning, the use of a gardening calendar, and becoming a "constant gardener."



# TYPES OF SUCCESSION GARDENING

## SAME VEGETABLE, STAGGERED PLANTING

Plant quick growing things every two weeks for continual harvest.

Lettuce  
Spinach  
Cilantro  
Radishes

## DIFFERENT VEGETABLES IN SUCCESSION

Plant one crop followed by another throughout the seasons.

Peas then Beans  
Garlic then Peppers  
Lettuce then Squash  
Early Brassicas then Corn

## PAIRED VEGETABLES IN THE SAME SPOT

Plant quick growing things by slow things, knowing that quick ones will be gone before the slow ones get big.

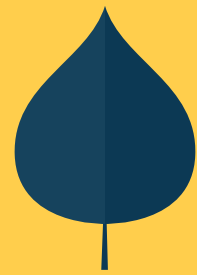
Tomatoes and cilantro  
Squash and lettuce

## SAME VEGETABLE DIFFERENT MATURITY RATE

Start and transplant these veggies at the same time but have a longer harvest due to different "days to harvest."

Tomatoes  
Radicchio  
Cabbage / Broccoli

# CONCEPTS TO KEEP IN MIND



## Footprint

If pairing vegetables in the same spot be mindful of the footprint of each of the plants during their growing season. Don't impact the growth of the slow growing plant by overcrowding it with quick plants.



## Friends and Enemies

AKA Companion planting. Some plants grow well together and others don't. When succession gardening try not to pair enemies together - onions and potatoes for example. Do pair friends! Tomatoes and Carrots.



## Rotation

Try to follow plant rotation best practices if possible. If you plant a bed with spring brassicas, try not to repeat that planting with fall brassicas.



## Needs

Plants can have different needs and these need to be considered when making pairings. Tomatoes do better with drip irrigation but carrots need some overhead watering to germinate.





# Plant Families for Rotation

	1	Lilac	<b>Alliaceae</b> (onion family) – onion, shallot, leek, garlic
	1	Blue	<b>Leguminosae</b> (pea & bean family) – all types of pea and bean
	2	Green	<b>Brassicaceae</b> (cabbage family) - calabrese, Brussels sprout, broccoli, cabbage, kohlrabi, cauliflower, kale, mizuna, pak choi, radish, arugula, rutabaga, turnip
	3	Yellow	<b>Solanaceae</b> (nightshade family) – potato, tomato, peppers, eggplant
	4	Orange	<b>Umbelliferae</b> (carrot family) – celery, celeriac, cilantro, fennel, carrot, parsnip, parsley, dill
	5	Salmon	<b>Cucurbitaceae</b> (marrow family) – zucchini, cucumber, marrow, melon, pumpkin, squash
	5	Pink	<b>Chenopodiaceae</b> (beetroot family) – Swiss chard, perpetual spinach, true spinach, beets
	Any	Grey	<b>Miscellaneous</b> (non-rotation annual crops) eg basil, lettuce, endive, cress, sweet corn, okra, salsify, scorzonera, New Zealand spinach, corn salad, chicory



# Portland Nursery Companion Planting Guide



# Companion Planting

VEGETABLE	FRIENDS	FOES
Artichoke	Brassica family	
Asparagus	basil, marigold, nasturtium, parsley, tomato	Allium family
Bean-Bush	beets, celery, corn, cucumber, nasturtium, peas, radish, strawberry, summer savory	Allium family, fennel
Bean-Pole	carrot, catnip, celery, chamomile, corn, cucumber, garlic, marigold, nasturtium, oregano, peas, potato, radish, rosemary, spinach, squash, summer savory	Allium family, beets, Brassica family, fennel
Beets	Allium family, beans (bush), lettuce, brassica family, tomato	beans (pole)
Broccoli	artichoke, beets, candy tuft, catnip, celery, chamomile, cucumber, dill, garlic, hyssop, mint, nasturtium, onion, oregano, pennyroyal, peppermint, potato, radish, rosemary, sage, southernwood, thyme, wormwood	basil, beans (pole), peas (snap), strawberry, tomato
Brussels sprouts	artichoke, beans (bush), beets, celery, chamomile, garlic, nasturtium, onion, peas, pennyroyal, potato, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, kohlrabi, beans (pole), strawberry, tomato
Cabbage	artichoke, beets, celery, chamomile, cucumber, dill, garlic, nasturtium, onion, peas, pennyroyal, peppermint (potted), potato, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, beans (pole), tomato
Carrots	beans, candy tuft, chives, leeks, lettuce, onion, parsley, peas, pepper, radish, rosemary, sage, tomato, wormwood	celery, dill
Cauliflower	artichoke, beans (bush), beets, cabbage, celery, chamomile, garlic, lettuce, nasturtium, onion, peas, potato, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, beans (pole), strawberry, tomato
Celery	beans, Brassica Family, chives, cilantro, garlic, leeks, nasturtium, spinach, tomato	carrot, parsnip
Collards	artichoke, beets, celery, chamomile, rosemary, southernwood, thyme, tomato, wormwood	basil, beans (pole)
Corn	alfalfa, beans, cucumber, geranium (white), jerusalem artichoke, marigold (odorless), melon, parsley, peas, potato, pumpkin, squash, sweet potato	tomato
Cucumber	beans, broccoli, cabbage, catnip, chives, corn, dill (use sparingly), eggplant, kale, kohlrabi, lettuce, marigold, nasturtium, onion, oregano, peas, radish, sunflower, tomato	basil, marjoram, potato, rosemary, sage, summer savory
Eggplant	beans, cilantro, cucumber, marigold, pepper, potato	
Garlic	beets, Brassica family, celery, chamomile, lettuce, radish, roses, tomato	beans, peas
Kale	artichoke, beets, beans (bush), celery, chamomile, cucumber, dill, garlic, lettuce, mint, nasturtium, onion, peas, potato, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, beans (pole), strawberry, tomato
Kohlrabi	artichoke, beets, brassica family, celery, chamomile, cucumber, garlic, nasturtium, onion, aromatic plants, late cabbage, late potato, radish, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, beans (pole), pepper, strawberry, tomato
Leek	carrot, celeriac, celery, onion	beans, peas
Lettuce	beets, carrot, cauliflower, cucumber, dill (use sparingly), kale, radish, strawberry	Allium family, Brassica family (except cauliflower and kale)
Melon	corn, radish, squash, sunflower, tomato	potato
Mustard	artichoke, beets, celery, chamomile, garlic, kohlrabi, nasturtium, radish, rosemary, sage, southernwood, thyme, wormwood	basil, beans (pole), tomato
Onion	beets, brassica family, carrot, chamomile, cucumber, dill, leeks, pepper, potato, roses, spinach, squash, strawberry, summer savory, tomato	asparagus, beans, peas, sage
Peas	aromatic herbs, beans, brassica family, carrot, cilantro, corn, cucumber, mint, radish, spinach, tomato	Allium family, gladiolas
Peppers	basil, carrot, catnip, eggplant, nasturtium, okra, onion, parsley, tomato	fennel, kohlrabi
Potato	beans, brassica family, catnip, cilantro, corn, eggplant, horseradish, marigold, nasturtium, onion, peas	cucumber, pumpkin, spinach, squash, sunflower, tomato
Radish	beans, beets, broccoli, carrot, chervil, cucumber, garlic, kohlrabi, lettuce, melon, mustard, nasturtium, peas, squash, tomato	hyssop
Spinach	beans, Brassica family, celery, onion, peas, strawberry	potato
Squash	beans, borage, catnip, celeriac, celery, corn, marigold, melon, mint, nasturtium, onion, radish	potato, pumpkin
Strawberry	beans (bush), borage, lettuce, onion, sage, spinach, thyme	Brassica Family
Tomato	asparagus, basil, bee balm, beets, borage, carrot, chives, cilantro, cucumber, garlic, marigold, melon, mint, nasturtium, parsley, peas, pepper, onion, radish, sage	Brassica family, corn, dill, fennel, potato
Turnip/Rutabaga	artichoke, beets, celery, garlic, peas, rosemary, sage, southernwood, spinach, thyme, wormwood	basil, beans (pole), hedge mustard, tomato



# Garden Calendar

## Portland Nursery Veggie Calendar



January	February	March	April	April	May	May	June	July	August	September	October
<i>Seed indoor</i>	<i>Seed indoor</i>	<i>Seed indoor</i>	<i>Seed indoor</i>	<i>Starts</i>	<i>Seed indoor</i>	<i>Starts</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>
Artichoke Arugula Endive Fava Beans Kale Leeks Lettuce Mustard Onions* Peas Scallions Spinach	Artichoke Asparagus Broccoli Cabbage Cauliflower Celeriac Celery Chard Chives Choi Eggplant 2/15* Endive Kale Kohlrabi Leeks* Lettuce Onion* Parsley Peppers 2/15* Tomatillo Tomatoes 2/15*	Broccoli Cabbage Cauliflower Celeriac Celery Eggplant* Leeks Lettuce Peppers* Scallions Tomatoes* Tomatillos* <i>Seed outdoor</i> Arugula* Asian greens Asparagus* (crown) Chard* Cilantro Choi Fava Beans Garlic (cloves) Kale Mustard greens* Peas* 3/1 Potatoes (tuber) Scallions Spinach* <i>Starts</i> Artichoke Arugula Asian greens Broccoli* Cabbage (early) Chard Choi Cilantro Green onions Jer. Artichoke* (tuber) Kale Lettuce Mustard Greens Peas Potatoes (tubers) Radicchio Radish Scallions Spinach	<b>LATE APRIL</b> Basil Cucumber Melon Pumpkin Squash, summer Squash, winter  <b>HARDEN OFF SEEDLINGS</b> <i>Seed outdoor</i> Arugula Asian greens Asparagus (crown) Beets* Broccoli* Brussels sprouts Cabbage (early types)* Carrots Cauliflower* Celeriac* 4/15 Celery* 4/15 Chard Cilantro Collards Dill Endive* Fennel (bulbing)* Jer. Artichoke* Kale* Kohlrabi (bulbing)* Leeks* Lettuce Mustard Greens Peas Radicchio Salad greens Scallions Sorrel Spinach  <i>Herbs to Plant any day of the year</i> Chives Oregano Parsley Rosemary Sage	Artichoke* Arugula Asian Greens Beets Broccoli* Brussels Sprouts Cabbage (early types)* Carrots Cauliflower* Celeriac* 4/15 Celery* 4/15 Chard Cilantro Collards Cucumbers Dill Endive* Fennel (bulbing)* Jer. Artichoke* Kale* Kohlrabi (bulbing)* Leeks Lettuce Mustard Greens Peas Radicchio Salad Greens Scallions Spinach	Basil Cucumber Melon  <i>Seed outdoor</i> Arugula Asian greens Basil 5/15 Beans Broccoli Cabbage (early and late) Carrots Cauliflower Celeriac Celery Chard Collards Corn 5/15 Cucumbers 5/15 Dill Eggplant (cover) * 5/15 Fennel (bulbing) Kale Kohlrabi Leeks Lettuce Peppers (cover) * 5/15 Radicchio Salad Greens Scallions Spinach Squash (all) 5/15 Tomatoes (cover) * 5/15 Tomatillo (cover) * 5/15 Turnips	Artichoke Arugula Basil 5/15 Beans Broccoli Cabbage (early and late) Carrots Cauliflower Celeriac Celery Chard Collards Corn 5/15 Cucumbers 5/15 Dill Endive Eggplant (cover) * 5/15 Fennel (bulbing) Kale Kohlrabi* Lettuce Melons* 6/1 Parsnips Pumpkins* 6/1 Rutabaga* Scallions Squash, summer until 7/15 6/1 Turnips <i>Starts</i> Artichoke Basil* Broccoli* Beans Broccoli Brussels sprouts* Cauliflower Celery Cucumbers Eggplant* Leeks Melons Peppers* Pumpkins Squash (all) * Swiss chard Tomatoes*	Arugula Asian greens* Basil Beans Beets* 7/1 Broccoli* 7/1 Brussels Sprouts Cabbage (early) Carrots* 7/1 Cauliflower* 7/1 Chard Cilantro Collards 7/1 Corn* until 7/15 Fennel (bulbing)* 7/15 Kale* Kohlrabi 7/1 Lettuce Parsnips Peas Radish Scallions Spinach Squash, summer until 7/15 Turnips* 7/1 <i>Starts</i> Artichoke Basil* Broccoli* Bruss. sprouts* Cabbage* Carrots* Cauliflower* Collards* Corn* until 7/15 Cucumbers Eggplant *til 7/15 Kale* Leeks Lettuce Peppers *til 7/15 Squash, summer untl 7/15	Arugula* Asian greens Beets Broccoli raab Cabbage (early)* 8/1 Cauliflower Chard* 8/1 Cilantro Collards Kale Lettuce* Mustard greens Peas Radish Salad greens Spinach* 8/1 Swiss chard Turnips  <i>Starts</i> Kale Lettuce Salad greens Sorrel  <i>EARLY AUGUST</i> Basil Broccoli Cabbage Carrots Cauliflower Collards Dill Fennel (bulbing)  <i>THROUGH AUGUST</i> Artichoke Asian greens Cilantro Kale* Leeks Lettuce Mustard greens* Salad greens Scallions Spinach*	Arugula* Asian greens* Beets Cabbage (for spring) Endive Fava beans* Garlic (cloves)* Lettuce* Kale Onions (sets)* Radish* Salad greens* Shallots (bulb)*  Cover Crops*  <i>Starts</i> Kale Lettuce Salad greens Sorrel  <i>Seed outdoor</i> Fava beans Garlic (cloves) Onion (sets) Shallot (bulbs)  Cover Crops (some)  <b>December</b> Collect seed catalogs, pour a cup of tea and plan for next year.  Organize your garden journal.	Fava beans* Garlic (cloves)* Onion (sets)* Shallots (bulbs)*  Cover Crops*  <i>Starts</i> Bok Choi Cabbage (over wintering) Lettuce Salad greens  <b>November</b> <i>Seed outdoor</i> Fava beans Garlic (cloves) Onion (sets) Shallot (bulbs)  Cover Crops (some)  <b>December</b> Collect seed catalogs, pour a cup of tea and plan for next year.  Organize your garden journal.	
<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>	<i>Seed outdoor</i>
Radish	Radish	Radish	Radish	Radish	Radish	Radish	Radish	Radish	Radish	Radish	Radish
* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.	* Indicates best times and methods of planting.
Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop	Shading indicates either a Fall Harvest or Overwintering Crop
Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.	Please note: Planting times may be altered depending on elevation, location, and the use of a cloche or row cover.





# Row Covers

## WHAT

Material made of plastic or various types of cloth that cover a row of vegetables.

## WHY

To provide protection either from cold, heat, insects, or sun.

## HOW

By using different structures and materials, cover your rows for the desired outcome.



# The Structure

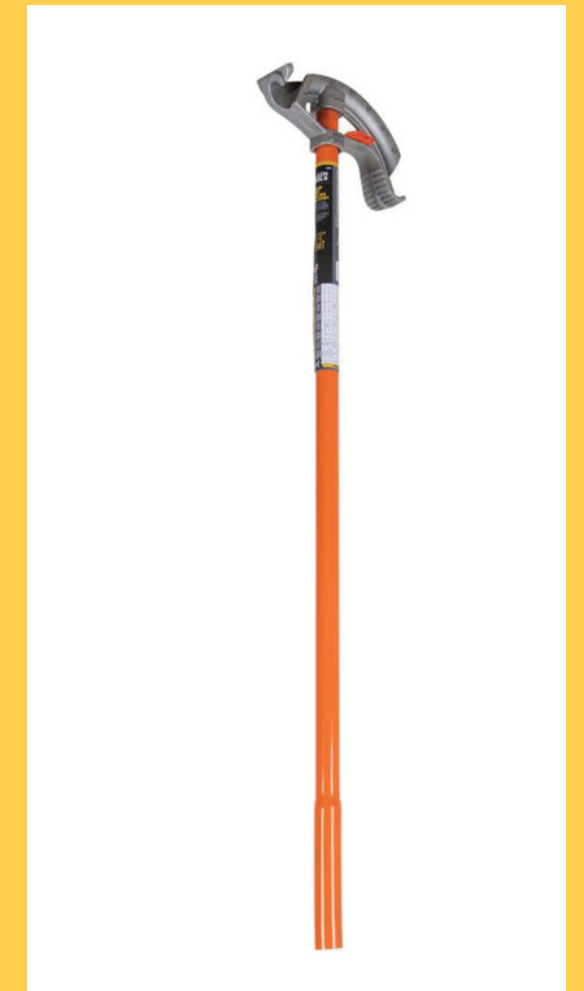
## HOOPS

3/4 inch conduit bender - \$50

3/4 inch conduit - 10 ft lengths for a 4 ft raised bed  
snap clamps for 3/4 inch conduit

## IMPROVISED

Tomato cages, metal stakes, wooden structure





# Greenhouse Plastic

## 6 mil thickness, UV Resistant

### PROS

Season extension

Plastic can last 5-10 years

### CONS

Too hot too fast

Storage

Doesn't let water in

Doesn't allow fo air flow





# Fabric Floating Row Cover, "agribon"

## PROS

- Lets light, rain, and air in
- Provides some insect protection
- Provides frost protection
- Light weight

## CONS

- Provides less warming than plastic
- Rips easily
- Comes in many different weights - read carefully before purchasing





# Shade Cloth for a changing climate

## BURNING PLANTS AND FRUIT

When the temperature gets so hot that plants and fruit burn, shade cloth may be an option





# ALL IN ONE

# LOCAL AND ONLINE







# Thinning

## WHAT

Removing seedlings to achieve desired plant spacing.

## WHY

To grow its very best, each vegetable needs as much unoccupied space as it can use at its full development.

Also because we planted too many seeds, because germination is uncertain

## HOW

Research plant spacing requirements to determine how far apart seedlings should be. Remove extra seedlings so that your plants are correctly spaced.

# Thinning Issues

“

I'VE MET GARDENERS WHO JUST CANNOT THIN OUT CROWDED SEEDLINGS. IT SEEMS LIKE MURDERING CHILDREN TO THEM. I ENTREAT YOU, GENTLEST OF PERSONS, TO RECONSIDER THE NATURE OF PLANTS. THINNING SEEDLINGS IS NOT LIKE DROWNING UNWANTED KITTENS. VEGETABLES DON'T MIND BEING THINNED. THEY ACTUALLY LIKE IT. THEY KNOW YOU ARE HELPING THEM OUT BY THINNING THEM

STEVE SOLOMON



# Thinning Issues

“

IT CAN TAKE DISCIPLINE TO THIN.  
MAKING THE FIRST CUTS, REMOVING OBVIOUSLY  
INFERIOR PLANTS, MAY BE EASY.  
BUT MAKING THE FINAL CUT - THAT IS, PULLING UP  
OR HOEING OUT PERFECTLY HEALTHY VIGOROUS,  
WORTHY PLANTS THAT DESERVE TO LIVE AS MUCH  
AS ANYONE BUT SIMPLY HAPPEN TO BE CLOSE TO  
OTHER WORTHY PLANTS - THAT CAN BE HARD. I  
HAVE TO GRIT MY TEETH AND ASK FORGIVENESS  
FROM HEAVEN WHILE I DO IT.

CAROL DEPPE



# TYPES OF THINNING



## EAT AS YOU GO

**Plant densely and then thin to proper spacing by eating the immature plants**

lettuce  
spinach  
onions  
carrots



## WAIT FOR TRUE LEAVES

**Plant more seeds than needed to ensure germination and then thin when seedlings have true leaves (second set of leaves)**

beans  
corn  
carrots  
beets



## LEAVE THE BEST

**Plant a hill with too many seeds to ensure germination and then thin leaving the best plants once they are established**

cucumbers  
squash



# Thinning Stages

"Seedlings should never, ever be allowed to compete with one another for light, water, and nutrients." -Steve Solomon

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## ONCE EMERGED

Any major clumps of seeds where you may have dropped way too many. During the first week some weaklings will die on their own so wait for major action.

## AT END OF TWO WEEKS

Pull out weakest seedlings to give the strong ones growing room. Thin to recommended spacing.

## AFTER TWO WEEKS

If a seedling emerges after this point, cull it. It probably is an unintended inter-variety cross pollination.



# Plant Spacing

## Territorial Seed Company



<div><div><div></div><div><div>TERRITORIAL</div><div>SEED COMPANY</div></div><div><div>Spring Gardening Chart</div><div></div></div></div></div>											
Vegetable	January	February	March	April	May	June	Soil Temp for Germ	Seed Depth	Thin Plants/Plant Spacing	Row Spacing	Harvest
Artichoke							65–75°F	¼"	3–5'	4–6'	June–July (2 <sup>nd</sup> year)
Arugula							50–70°F	¼–½"	6–12"	16–18"	April–June
Asparagus Seed							65–80°F	¼"	10–15"	3–6'	April
Asparagus Crowns								4–6"	10–15"	3–6'	April (3 <sup>rd</sup> year)
Beans							60–85°F	1"	4–18"	18–36"	June–August
Beans, Fava							45–65°F	1–2"	3–6"	12–30"	June–August
Beets							50–75°F	½"	3–4"	12–16"	June onward
Broccoli							55–75°F	¼"	12–24"	18–36"	June onward
Brussels Sprouts							55–75°F	¼"	24"	18–36"	Sept.–February
Cabbage							55–75°F	¼"	18–24"	2–4'	June–August
Carrots							45–85°F	¼"	1–3"	9–16"	June onward
Cauliflower							55–75°F	¼"	12–24"	18–36"	June–August
Celery/Celeriac							55–70°F	⅛"	12"	18–24"	August onward
Chinese Cabbage							45–75°F	¼"	12–18"	18–36"	June–July
Collards							55–75°F	¼"	12–24"	18–36"	June onward
Corn							65–85°F	1–2"	8–12"	24–30"	August–Sept.
Cucumbers							65–90°F	½"	1–2/hill	3–4'	July–September
Eggplant							75–90°F	¼"	12–18"	2–3'	August–Sept.
Endive							50–70°F	¼–½"	6–12"	16–18"	May–July
Fennel							50–70°F	¼–½"	6–12"	16–18"	May–July
Kale							55–75°F	¼"	12–24"	18–36"	June onward
Kohlrabi							55–75°F	¼"	3–8"	12–18"	June onward
Leeks							50–85°F	¼–½"	4–5"	12–18"	July onward
Lettuce							40–80°F	⅛"	10–16"	16–18"	May onward
Melons							70–85°F	½"	3–4'	5–6'	August–Sept.
Mustard							40–75°F	¼"	6–18"	9–18"	May onward
Okra							70–90°F	½"	12–18"	36"	July–September
Onions, Bulb							50–75°F	⅛–½"	2–7"	12–24"	August–Sept.
Pac Choi							45–75°F	¼"	12–18"	18–36"	June–July
Parsnips							55–75°F	½"	3–4"	12–18"	Sept.–December
Peas							45–75°F	1–1 ½"	N/A	18–24"	May–July
Peppers							70–90°F	¼"	12–18"	24–30"	July–September
Potatoes								4–6"	24"	24–36"	May–July
Pumpkins/Gourds							65–85°F	1"	3–4'	4–6'	Sept.–October
Radishes							45–80°F	½"	1–2"	8–12"	May–July
Rutabagas							50–75°F	¼–½"	6–8"	12–16"	Sept. onward
Shallot Seed							50–85°F	½"	2–4"	12–24"	August–Sept.
Spinach							45–75°F	½"	3–6"	12"	April–July
Squash, Summer							65–85°F	1–1 ½"	1–2/hill	3–6'	July–September
Squash, Winter							65–85°F	1–1 ½"	1–2/hill	3–6'	August–Frost
Sweet Potatoes							65°F		16–18"	12–24"	August–Frost
Swiss Chard							50–75°F	½"	10–16"	18–24"	May onward
Tomatoes							70–90°F	¼"	18–36"	3–4'	July–September
Turnips							50–75°F	¼–½"	6–8"	12–16"	May–July
Watermelon							70–85°F	½"	3–4'	5–6'	August–Sept.

Direct sow (based on our area of Cottage Grove, OR) Sow indoors Transplant (determined from a last frost date of approximately May 12<sup>th</sup>) Cover at transplant



# Growing Vegetables West of the Cascades

STEVE SOLOMON

Degree to Which Vegetables Can Benefit from Increased Spacing		
Great Benefit	Some Benefit	Likes Crowds
Carrots	Swiss chard	Bush peas
Beets	Onions, bulb	
Spinach	Radishes	
Kohlrabi	Turnips	
Broccoli	Arugula (rocket)	
Indeterminate tomatoes	Cauliflower	
Summer squash	Winter squash	
Rutabaga	Determinate tomatoes	
Corn salad	Peppers	
Scallions	Kale	
Pole beans	Bush beans	
Leeks		
Celery (celeriac)		
Pole peas		



A photograph of a garden. In the foreground, there is a vegetable patch with rows of green leafy plants and some taller plants supported by colorful wire cages. The soil is dark brown. In the background, there is a grassy lawn with a large patio umbrella and several lounge chairs. Two people are sitting on the chairs. The background is filled with lush green trees.

# Weeding

## WHAT

Removing (undesirable) plants from where they are growing.

## WHY

**To grow its very best, each vegetable needs as much unoccupied space as it can use at its full development.**

Also because the undesirable plants often have characteristics that are problematic (vegetables are weak and weeds are strong).

## HOW

Through a variety of techniques, including digging, pulling, and hoeing based on what weed one is removing and one's physical abilities.





# You Must Weed

THERE IS NO WAY AROUND IT



# Weeding and Plant Spacing

HOW WILL YOU WEED?

WHAT CAN YOU PHYSICALLY DO?

Upright

Seated

Hands and Knees

All of the above?

SPACE PLANTS FOR WEEDING

Raised beds

Traditional beds





# Upright Weeding Tools



# Hand Weeding Tools



# Annual Weeds

**An annual life cycle means that a weed goes from seed to seed in one growing season or one year.**

Purple Dead Nettle.    Shining Geranium  
Hairy Bittercress.    Morning Glory  
Herb Robert            Annual Grasses

# Perennial Weeds

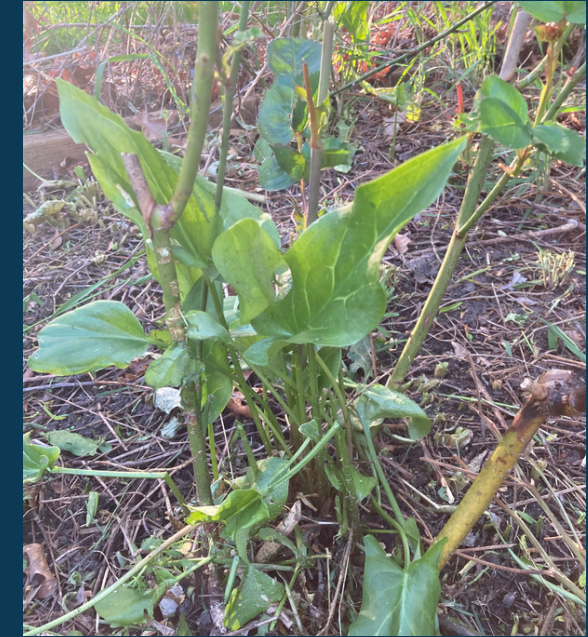
**A perennial life cycle means that a weed regrows season after season.**

Bindweed    Canadian Thistle  
Wild Garlic. Italian Lily  
Dandelions  
Perennial Grasses

**[OSU EXTENSION WEED ARTICLE](#)**









# Weeding Thoughts

## You can win this fight

**Small weeds are easier to kill than big ones.**

**Big weeds are closer to going to seed or spreading root system.**

**Sharp tools work better and with less effort.**

**Pull perennial weeds when it is wet.**

**Kill annual weeds when it is dry.**

**Removing the weed's ability to do photosynthesis can work over time.**

**2-3 inches of mulch can help.**

**Cover crops in fall and winter will compete with weeds.**

